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# Schedules- Part 8, 9 & 10

## PART 8 —Air Movement and Ventilation

In this Part unless the context otherwise requires—

air movement" means natural air flow such as prevailing breezes and is essential up" to 2 metres above floor level when considering thermal comfort in a habitable room or any such space within the meaning of these provisions in a warm humid climate; "borrowed ventilation" means ventilation the egress or ingress of which is through a space or room other than the space or room for which ventilation is being considered; mechanical ventilation means ventilation within the meaning of this provision by mechanical means such as propeller flow fans, impeller Type fans, centrifugal or tangential flow fans;"'natural ventilation" means die exchange of fresh air to or from a habitable room or any such space within the meaning of these Regulations and results from a temperature difference between a significantly cooler outdoor air and a relatively warmer air in an interior space; "privy accommodation" means an accommodation containing a pit latrine, an earth closet, a K.V.I.P.. a water closet, a urinal or any such facility;"top ventilation" means a facility for the ventilation of a habitable room, larder, stairway or any such space within the meaning of this provision and located within a building or part thereof at a height of not less than 1.75 metres above floor.

This Fart applies to the air movement through and natural ventilation of any habitable room store, larder, stairway, room containing bath, urinal, privy accommodation, corridor or any such room or space which has one or more windows. Every habitable room, store, larder, ventilation, stairway,

room containing bath, urinal, privy accommodation, corridor or any such room or space shall be provided with facilities for the entry from and natural ventilation to the open air provided that the rooms and spaces may be considered to satisfy this provision if they are mechanically ventilated except that electric fans shall not be permitted in lieu of the requirement of this provision. Every habitable room shall be provided with windows and ventilation openings and appliances so located as to facilitate within the rooms adequate cross air movement to and from the open air but the facilities shall not be more than 1200mm above floor level and the highest level shall not be less than 2100m above floor level.

The requirement of this Part shall be considered satisfied if natural ventilation and air movement are to and from verandahs, balconies, conservatories or any such space or room which meets the requirements of Pan VII. No door or doorway shall be taken into account when calculating the area available for air movement and the entry of natural ventilation. Windows shall open to the external air and shall be provided in all rooms. The total clear opening shall in every case be equivalent to at least one sixth ('/,,') or 16% of the floor area. Ail habitable rooms shall have at least two windows and adjacent walls shall be so located as to ensure effective air movement and cross ventilation. Where all the windows of a habitable room have fixed glazing, the room shall be provided with two ventilation openings to open into the open air. Such openings shall be in accordance with subregulation of this regulation.

A window opening from a room onto a verandah shall be considered to open into the external air only if permanent unobstructed opening in the verandah wall is directly opposite the room window and is of at least twice its area. Part of the natural ventilation of every habitable room, shop Ventilation of or workroom may be top ventilation. The area available for top ventilation shall not be less than one sixtieth (2%) of the floor area of the room. The total area available for natural ventilation shall not be less than-one sixth of the floor area of the room, where the ventila¬tion is one wall only; or one eighth of the floor area of the room where there is ventilation in two or more walls provided at least one quarter of the minimum area for ventilation is in each of the two walls. Where natural ventilation is through verandah—the minimum permissible areas of top and total ventilation to the open air from the balcony or verandah shall be balcony or calculated from the combined areas of the room and balcony or verandah added together; and the minimum areas of top and total ventilation to the balcony or verandah from the room and balcony or verandah added together.

Where part of a habitable room is used as a kitchen—the minimum permissible areas of top and total ventila-tion shall be calculated from the total area of the room; and adequate ventilation shall be provided over the kitchen area by means of a Hue, top ventilation or tiny other known conventional method proof of which shall lie with the applicant. Every storage room which is used or intended to be used for storing food other than food in unopened sealed containers shall have ventilation to the open air. Ventilation of a storage room shall consist of openings for top ventilation not less than 0.15nr in area and openings for other ventilation of not less than 0.15m2 in area, the lower side of which is not more than 0.3m above floor level. All such openings shall be covered with fly screens. Part of the natural ventilation of every kitchen may be top ventilation. The area of top ventilation of a kitchen shall be not less than one-twenty-fourth (5%) of the floor area of the kitchen exclusive of the area of any flue attached to a heating appliance. The area of total ventilation of a kitchen shall be at least one sixth (16%) of the floor area of the kitchen.

#### More Info:

- First To Seventh Schedule
- Schedules
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- Schedules- Part 14, 15 & 16
- Schedules- Part 17, 18 & 19

#### View Links:

- Chieftaincy Act, 1971
- Ghana Investment Promotion
- **Human Trafficking**
- **Local Government Act**
- Minerals And Mining
- Narcotic Drugs
- National Building Regulations
- National Identification Act,
- National Labour Commission Regulations, 2006
- Pndc Law
- **Presidential Commission**
- Trade Policy
- W/ African Gas Pipeline Act,

The total area available for the ventilation of an ablution room shall be at least 0.20m2. The total area available For the natural ventilation of a room containing only privy accommodation shall not be less than 0.20m2. The total area available for the natural ventilation of a room containing both bath and privy accommodation shall not be less than 0.30m2. Where privy accommodation is not a water closet or an aqua privy the whole area of the ventilation opening shall be covered with mosquito gauze fixed to a wooden frame. There shall be no borrowed ventilation from an enclosed place into a privy accommodation. In the event of fire it shall be possible to escape from every habitable room, shop or workroom by means of at least one opening in addition to the door. The area of this opening shall be not less than 0.40m2 and neither the height nor width shall be less than 0.45m2 in the clear, the bottom shall be not more than 0.75 above floor level.

An escape opening shall be considered to satisfy this provision—where metal bars, expanded metal or louvres are fitted over the escape opening as a protection against burglary and are/fixed to a casement which can be opened and where this casement is locked or padlocked shut, the key is kept iii a glass fronted box fixed to a wall of the room at least 1.0m from the opening; or where glass louvres are used, they must be capable of being quickly smashed or otherwise removed and flyscreen cut or removed without delay.

The following requirements for air flow and natural ventilation shall apply also—where each external wall of the room is not less than 0.30m thick and exerts a stress of at least 4,311 pascals of vertical superficial area, the total area available for airflow and natural ventilation shall not be less than one-fortieth of the floor area of the room provided that nothing in this provision shall require any part of the opening to be less than 2m above floor level; where an external wall located between southeast and south-west or an external wall facing between north-east and north-west is shaded from the direct rays of the sun by eaves or other projection which extends at least 1.2m from the outer surface of the wall—the total area available for the airflow and natural ventilation shall be not less than one twelfth of the floor area of the room; and the bottom of this opening shall be not less than 1.0m above floor level. In all climates where airflow and natural ventilation is through a covered balcony or verandah the area of such an opening shall be not less than one eighth of the combined floor areas of the room and balcony or verandah added together.

#### PART 9 —Thermal Insulation

This part applies to roofs, walls, and fenestration of any building which is used partly or wholly as a habitable dwelling, shop, work- room, storeroom or any similar purpose. Any roof with its related structures to which this Part applies Roots, shall adequately mitigate heat gain through the roof and fenestration into an interior space fenestration and shall have an outer covering or finish with a high thermal resistance. A u-value of not more than 0.25 for any roof shall be considered to satisfy this requirement. A roof may be considered to satisfy this requirement if it has an outer finish or covering of any of the following materials or a combination of them— (a) wood shingles;

- 1. corrugated aluminium sheet;
- 2. corrugated galvanised iron sheet;
- 3. copper;
- 4. flat aluminium sheet; or
- 5. bituminous felt with an approved mineral finish or paint, except that this provision does not prohibit the use of concrete, tiles, clay tiles or slates.

A material not specified in subregulation does not preclude its use but the burden of proof of the resistivity of any such material used shall lie on the applicant or developer. Any external wail of any part of a building to which this provision applies, including its internal surface finish, shall, with the exception of any opening, be so constructed as to provide an adequate mitigation against the passage of heat from outside into the interior space. Any wall construction with a u-value of not more than 0.30

shall be considered as satisfying this requirement. Any wall of a room wholly or partly in the roof of a building or any part of a building to which this provision applies shall comply with subregulations (I) and (2) of this regulation and shall have a u-value of not less than 0.30.

Any opening for fenestration or doorway or any wall in a building to which this provision applies shall be so constructed as to mitigate solar heat gain from the direct rays of the sun and shall be so protected by means of extension of eaves and any other projection extending to a minimum distance of 600m from the external wall or any other approved solar protection; except that any wall which is not so protected shall be considered to satisfy this requirement if its thermal performance meets the requirements of this provision. Openings for fenestration where possible, shall be located in the north or south facades and shall be protected in accordance with this provision. The specifications in Schedule 9 to these Regulations shall apply in respect of u-values of building materials.

# PART 10— Hearths, Chimneys and Heat-Producing Appliance Sub-Part 1— Interpretation and scope of application of this Part In this Part unless the context otherwise requires— "appliance" means a heat-

In this Part unless the context otherwise requires— "appliance" means a heat-producing appliance including a cooker or any other such appliance which is designed to burn—

- solid fuel (in tin's Part referred to as "solid fuel appliance");
- oil (in this Part referred to as a "oil burning appliance");
- gaseous fuel (in this Part referred to as a "gas appliance");"appliance ventilation duct" means a duct that forms a pas¬sage which in one part serves to convey combustion air to one or more gas appliances, in another part serves to convey the products of combustion from one or more gas appliances to the external air and intermediately serves both purposes; "chimney" includes any part of the structure of a building that forms part of a flue other than a Hue pipe;

"Class I appliance" means—a solid fuel appliance or oil-burning appliance with an output rating not exceeding 45 kw; or an incinerator with a refuse combustion chamber exceeding 0.03m3 but not exceeding 0.08m1 in capacity; "Class II appliance" means—a gas appliance with an input rating not exceeding 45 kw; or an incinerator with a refuse combustion chamber not exceeding 0.03m3 in capacity; "constructional hearth" means a hearth that forms part of the structure of a building; "discharge" means the discharge of the products of combustion; "external wall" includes any external cladding or internal lining; "floor" includes any ceiling which is applied or fixed to the underside of the floor; "flue" means a passage for conveying the discharge of an appliance to the external air and includes any part of the passage in an appliance ventilation duct which services the purpose of a flue; "flue pipe" means a pipe that forms a flue, but does not include a pipe built as a lining into either a chimney or an appliance ventilation duct; "high-rating appliance" means—a solid fuel appliance or oil-burning appliance with an output rating exceeding 45 KW; or a gas appliance with an input rating exceeding 45 KW; or an incinerator with a refuse combustion chamber exceeding 0.08m3 in capacity, and "high-rating" shall be construed accordingly; "insulated metal chimney" means a chimney comprising a metal flue lining, non-combustible thermal insulation and a metal outer casting; "main Hue" means a flue serving more than one appliance; "permanent vent" means a purpose made opening duct designed to allow the passage of air at all times; "roof includes any ceiling which is applied or fixed to the under side of a roof and is in a plane parallel to that of the roof covering; "roomsealed appliance" means a gas appliance which draws its combustion air from a point immediately adjacent to the point where it discharges its products of combustion and is so designed that the inlet, outlet and combustion chamber of the appliance is situated, except for a door for ignition purposes;"subsidiary flue" means a flue conveying the discharge of one appliance into a main flue; "superimposed hearth" means a hearth which does not form a part of the structure of a building; "ventilation opening" has the meaning provided for that expression in Part VI11

The provisions of this Pan shall apply to the construction of—a chimney which is a separate building; and an insulated metal chimney which serves a Class I or Class 11 appliance. Any provision in this Part which applies to a chimney, flue pipe, fireplace recess or constructional hearth serving a Class I appliance shall also apply where a solid fuel fire is intended to burn directly on a hearth without the installation of any appliance. For the purposes of this regulation, "appliance" and "incinerator" shall not include an incinerator that uses electricity as a means of igniting refuse.

#### Sub-Part II—Where solid Fuel is Used

Where in order to satisfy the requirements for the provision of kitchens or for any other reason it is intended to use an open fire or heat producing appliance which bums solid fuel, there shall be installed either—a fireplace opening which complies with sub-regulation of this regulation; or

in the case of a portable cooking appliance, an open cooking slab which complies with regulation 98(1) provided that an open cooking slab shall be used only with the written permission of the District Planning Authority.

# Sub-Part II—Where solid Fuel is Used

Where in order to satisfy the requirements for the provision of kitchens or for any other reason it is intended to use an open fire or heat producing appliance which bums solid fuel, there shall be installed either—a fireplace opening which complies with sub-regulation of this regulation; or in the case of a portable cooking appliance, an open cooking slab which complies with regulation 98(1) provided that an open cooking slab shall be used only with the written permission of the District Planning Authority.

Every fireplace opening shall comply with the following requirements-it shall be provided with a hearth which complies with regulation 97 (1) relating to hearth; the back and sides of the fireplace opening shall be of solid non-combustible construction throughout; the thickness of the wall at the back of the fireplace open—ing shall be—not less than 150mm where the wall is exposed on one side to the open air; or not less than 200mm where the wall is not exposed to the open air; and the thickness of the jambs at the sides of the fire place opening shall not be less than 200mm.

The solid non-combustible construction made in accordance with subregulation (2) of this regulation shall extend to the full height of the fireplace opening and to the underside of the linted over the opening and shall in no case be less than 800mm above the upper finished surface of the hearth. A fireplace opening shall be considered to satisfy subregulation of this regulation if—the back and sides of the fireplace opening are made of concrete mix B or approved bricks set in mortar mix C or sand cement blocks set in mortar mix C; or intels are of concrete mix C suitably reinforced or a sufficiently strong support or steel wrought iron or other approved materials or approved burnt bricks set in arch form in mortar mix C in Schedule 3 Table B.

Every fireplace opening designed for an open fire or for a built- in or inset heat producing domestic appliance burning solid fuel shall be provided with a hearth which complies with the following—the hearth shall be of solid non-combustible construction material throughout;the hearth shall extend throughout the whole base of the fireplace and shall project not less than 400mm beyond the face of the opening or the front of the appliance where the appliance projects into the room and beyond each other side of the fire place opening for a distance of not less than 150mm; and the hearth throughout its whole area shall be not less than 100mm exclusive of any tiles or other non-combustible surface finish. Where the fireplace opening is raised above the floor level, the area of floor beneath, at the sides of, and in front of the fireplace shall be regarded as hearth and shall comply in construction and thickness with subregulation (1) of this regulation.

Every free-standing heat producing appliance burning solid fuel shall be provided with hearth which complies with the following—the hearth shall be of solid non-combustible construction material throughout; the hearth shall extend throughout the area below the base of the appliance and shall extend beyond the front of the

appliance for a distance of not less than 400mm and beyond each other side for a distance of not less than 150mm; and the hearth throughout its whole area shall not be less than 100mm thick exclusive of any tiles or other non-combustible finish. The upper surface of that portion of a hearth which projects in front of the fireplace or appliance shall not be lower than the upper finished surface of the floor adjoining it. No timber or other combustible material shall be fixed below a hearth within 100mm measured vertically from the upper finished surface of the hearth; and of the timber fillets supporting the edges of the hearth at the front or sides of this measurement of 100mm, and at least 50mm shall be an air gap.

A hearth shall be considered to satisfy sub-regulation (1) of this regulation if—it is constructed of concrete mix B or approved bricks set in mortar mix C in Schedule 3 Table C; and any timber supports to the edges of the hearth do not extend more than 50mm under the edge of the hearth.

Any open cooking slab approved in a building plan shall com- Open cooking ply with the following—  $\;\;$  slab

- it shall be constructed of solid non-combustible materials;
- it shall be not less than 900mm in length and 500mm in width; and no combustible materials shall be fixed nearer to the slab than 150mm measured horizontally from any edge of the slab.

An open cooking slab shall be considered to satisfy subregulation (1) of this regulation if—it is constructed of—

- 1. insulating board;
- 2. stones slab;
- 3. concrete mix C in Schedule 3 Table C of at least 25mm thick;
- 4. blocks; or
- 5. bricks; and it is either self-supporting or supported in a suitable way.

No timber or other combustible material shall be built into the structure of a building within 200mm from any part of a fireplace opening or an opening into a fireplace opening. Nothing in subregulation (1) of this regulation shall prevent the use of a damp-proof course composed of combustible materials if it is solidly bedded in mortar. Every heat-producing appliance shall be designed and constructed so as to contain the fire and shall— be provided with an opening of adequate size for the removal of smoke and noxious fumes; or if the appliance is portable, be such that it can be placed on a cooking slab. Every heat producing appliance which uses solid fuel shall be of a type approved by the District Planning Authority. Every heat producing appliance other than a portable appliance shall be installed—directly on a hearth; or on a layer of non-combustible material which rests wholly on a hearth. Every such appliance shall be installed so that no distance measured horizontally between any part of the appliance and a plane rising vertically from an edge of the hearth is less than—

- 1. 400mm from the front of the appliance; or
- 2. 150mm from the back or sides of the appliance.

There shall be provided for every portable heat-producing appliance-a hearth; or an open cooking slab, with the permission of the District Planning Authority. A hearth provided under subregulation (5) shall—extend throughout the whole base of the fireplace and shall project not less than 400mm beyond the face of the opening or the front of the appliance where the appliance projects into the room and beyond each other side of the fireplace opening for a distance of not less than 150mm; and be not less than 100mm throughout its whole area exclusive of any tiles or other non-combustible surface finish.

## Sub-Part II - Use of Liquid Fuel

Where in order to comply with this Part it is intended to use a heat producing appliance which burns liquid fuel there shall be provided—a fixed portable appliance no burner of which is designed to consume more than 300ml of liquid fuel per hour, in which case there shall be provided an open cooking slab which complies with regulation 98 or 106; or an appliance of which no flame is exposed and of which at least one burner is designed to consume more than 300ml of liquid fuel per hour, in which case there shall be provided a hearth or an open cooking slab; or a free standing burner with an exposed flame at least one burner of which is designed to consume more than 300ml of liquid fuel per hour; in which case there shall be provided a hearth which complies with regulation 104(4) or a surround which complies with regulation 106(3). Where in order to comply with these Regulations a hearth is provided it shall—be of solid, non-combustible material throughout; extend under the whole area of the appliance and shall project at least 150mm beyond each side or to a wall or surround constructed of solid non-combustible material whichever is the lesser distance; and be not less than 50mm thickness throughout its whole area.

Where in order to comply with regulation 104(3) surround is provided for an appliance—the surround at the back and sides of the appliance shall be of solid non-combustible material throughout; and the thickness of the surround shall be not less than 150mm in any place. "No combustible material shall be fixed within 225mm measured horizontally of any flame.

A surround shall be considered to satisfy regulation 98(1) if it is of concrete mix C or cement aggregate dense blocks. Any open cooking slab shall conform with regulation 98 of these Regulation. Every heat producing appliance which burns liquid fuel installation of shall be of a type approved by the District Planning Authority. Every appliance which burns liquid fuel shall be installed in such a way and position—as to operate efficiently and safely;that no distance measured horizontally between any flame and any combustible material is less than 200mm; and that no distance measured vertically upwards from any flame to any combustible material is less than 75mm

# Sub-Part III—Use of Gaseous Fuel

Where it is intended to use a heat producing appliance which burns gaseous fuel in

a building, there shall be provided—a fixed appliance, in which case there shall be provided a hearth which complies with regulation or a portable appliance, in which case there shall be provided an open cooking slab which complies with regulation 98. For every fixed heat producing domestic appliance which urns gaseous fuel there shall be provided a hearth which complies with the following—the hearth shall be of solid non-combustible construction material throughout; the hearth shall extend over the whole area covered by the appliance and shall project in front of the appliance not less than 225mm measured horizontally from any flame or material which becomes incandescent when the appliance is in use, and beyond each other side of the appliance not less than 150mm or to any adjacent non-combustible wall which ever is the lesser distance except that this shall not apply in the case of an appliance —of which the lowest part of any flame or material becomes incandescent when the appliance is in use at a height of not less than 225mm above any combustible material; or which is so designed that under any condition of normal operation the temperature at the base of the appliance does not exceed 1000c and provided further that where the floor is of concrete or other solid non-combustible material no additional hearth is required.

Where control community biogas or individual house unit biogas systems are provided or are intended for use in a building, the distribution pipes and other fittings shall be of non-corrosive materials and of such quality as shall withstand the pressure build-up of gas in the systems. A biogas system shall be designed and constructed so as not to be a source of danger or nuisance to the environment. The use of such a system shall be subject to the approval of the District Planning Authority. A hearth shall be considered to satisfy regulation 103 if it is constructed of —asbestos insulating board stone; concrete mix C in Schedule 3 Table C at least 25mm thick; or cement sheet at least 6mm thick.

Every heat producing appliance which burns gaseous fuel shall be of a type approved by the District Planning Authority. Every gas-burning heat producing domestic appliance shall be installed in such a way as— to operate efficiently and safely;to comply with any existing gas bye law; and where the source of gaseous fuel is from, a cylinder container, a compartment shall be constructed to isolate the cylinder from the gas appliance. (3) No gas cylinder shall be left unprotected unless it is located outside the kitchen in the open air.

#### Sub-Part IV-Use of Electricity for Fuel

Every heat producing appliance which consumes electricity shall be of a type approved by the District Planning Authority. An electric heat producing cooking appliance shall be properly installed. Where it is intended to use a heat producing cooking appliance which consumes electricity there shall be provided—a fixed appliance in which case there shall be provided a hearth which complies with subregulation (4) of this regulation; or a movable appliance in which case there shall be provided for each kitchen an open cooking slab which complies with regulation 98. For the purposes of this regulation the hearth-shall be of solid non-combustible construction material throughout; and shall extend over the whole area covered by the appliance; and shall project in front of the appliance not less than 225mm measured horizontally and beyond each other side of the appliance not less than 150mm or to any adjacent wall whichever is the lesser distance except that where the floor is of concrete or other solid non-combustible mate—rial no additional hearth is required.

A hearth shall be considered to satisfy sub-regulation (4) if it is constructed of—asbestos insulating board; or stone; or concrete mix C at least 25mm thick; or asbestos cement sheet at least 6mm thick.

### **SCHEDULE 8 - Regulation**

Interpretation In this Schedule—"floor area" means the floor area of each storey in the building or, if the building is divided into compartments, the floor area of each storey in the compartment of which the element of structure forms part; "height" means the height of a building, and not the height of any compartment in the building, but if any part of the building is completely separated throughout its height both above and below ground from all other parts by a compartment wall or compartment walls in the same continuous vertical plane, any reference to height in relation to that part means the height solely of that part.

In addition any external load bearing wall shall have fire resistance of not less than half an hour. Separating walls as well as compartment walls or floors falling within purpose group I and II in Table A to the Schedule shall have fire resistance of not less than one hour. Any compartment wall separating a flat or maisonette from any other part of the same building shall not be required to have fire resistance exceeding one hour unless—

the wall is a loadbearing wall or a wall that forms part of a protected shaft; or it is a building which belongs to two purpose groups the separating wall of which shall have the minimum fire resistance of one and a half hours or more.

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